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EXAMINER

HOM, SHICK C

ART UNIT PAPER NUMBER

2666

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/067,793 | KOSLAR, | |
| | Examiner | Art Unit | |
| | Shick C. Horn | 2666 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/8/02, 5/10/04, 4/8/05, 8/10/05, 12/2/0.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

Claim Objections

3. Claim 16 is objected to because of the following informalities: in claim 16 line 6, delete typo "bite" and insert ---bit---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 9 which recite "an information symbol signal" is not clear as to whether it is reciting ---each of the information symbols--- or how it relates to the information symbols of claim 1 lines 2-3 and 11-12. In claim 12 line 11 which recite "the channel transmission characteristics" lacks clear antecedent basis because no channel transmission characteristics have been previously recited in the claim and therefore the limitation is not clearly understood. In claim 18 line 4 which recite "the plurality of message channels" lacks clear antecedent basis. In claim 28 line 3 which recite "the first Nyquist criterion" lacks clear antecedent basis. In claim 32 line 6 which recite "the echo" lacks clear antecedent basis. Claims 2-11, 13-17, 19-27, and 29-31 are rejected under 35 U.S.C. 112, second paragraph because they depend from rejected claims 1 and 12.

Art Unit: 2666

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-11, 23-30, and 32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-2 merely recite a method of defining transmission quality and channel characteristics which is not a process, machine, manufacture, or composition of matter and thus non-statutory. Claims 3-11, 23-30, and 32 are rejected under 35 U.S.C. 101 because they depend from rejected claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2666

7. Claims 12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Alouini et al. (6,304,593).

Regarding claims 12, 13:

Alouini et al. disclose a transmission system comprising a transmitter and a receiver, a method of transmitting information symbols channel via a channel having a bandwidth, the information symbols being transmitted in accordance with one or more transmission parameters selected from a group of parameters comprising transmission speed, bit error rate, and transmitter power, the method comprising: determining a first priority transmission parameter (see col. 2 lines 19-50 which recite recognizing the characteristics of the channels and information passing through the channels and using that information to improve performance and the data rate of the output by transmitting the information in accordance with higher or lower bit error rate, adjusting the power to maintain carrier-to-noise ration, changing the rate of the data, delay and determining that data versus voice transmission demands higher rates with fewer errors clearly anticipate determining a first priority transmission parameter); assessing the channel transmission characteristics at the receiver; communicating the assessed channel transmission characteristics transmitter to the

Art Unit: 2666

transmitter before beginning transmission of the information symbols (see col. 2 lines 10-15 which recite channel estimation at the receiver and the feedback path between the transmitter); and transmitting information symbols while maintaining a predetermined value for at least the first channel transmission parameter as in claim 12 and adjusting transmission parameters other than the first transmission parameter in order to maintain the predetermined value of the first priority transmission parameter as in claim 13 (see col. 2 lines 32-38 which recite adjusting power to maintain relatively constant carrier-to-noise ratio at the receiver).

Regarding claims 14-16:

Alouini et al. disclose determining second and third priority transmission parameters as in claim 14; determining for a particular transmission whether transmission system transmit voice data as in claim 15; and upon determining the transmission system will transmit voice, further determining transmitter power is the first priority transmission parameter, transmission speed is the second transmission parameter, and bit error rate is the third priority transmission parameter; and, upon determining that the transmission system will transmit data, further determining that bit error rate is the first priority

Art Unit: 2666

transmission parameter, transmitter power is the second priority transmission parameter, and transmission speed third priority transmission parameter as in claim 16 (see abstract which recite the voice and data transmission having different characteristics whereby voice is given all the power it needs for reliability and data transmission given higher data transmission rate, col. 3 lines 11-23 recite priority provided to voice communication by allocating power to ensure satisfactory transmission of speech, col. 4 lines 55-67 and col. 5 lines 18-44 which recite providing power to meet the target voice bit error rate).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alouini et al. (6,304,593) in view of Sato (6,414,948).

Art Unit: 2666

For claims 17-18 Alouini et al. disclose the system and method described in paragraph 7 of this office action. Alouini et al. disclose all the subject matter of the claimed invention with the exception of wherein information symbols are transmitted in a sequence of time slots, and wherein adjusting transmitter power on a time slot by time slot basis in relation to a determination of transmission system during each time slot as in claim 17 and further comprising defining the transmission system an organization channel and a plurality of mutually independent message channels, each one of the plurality message channels defining a corresponding sequence of time slots; defining transmission frames, each frame having a frame length and comprising sub-frame interval during which channel characteristics, including transmission system gain, are measured; transmitting information symbols via a selected one of the plurality message channels in relation to a transmission frame; varying time slots in the selected one message channel in accordance with measured channel characteristics; and, varying transmitter power on a time slot by time slot basis accordance with transmission system gain as in claim 18.

Sato from the same or similar fields of endeavor teach that it is known to provide wherein information symbols are transmitted in a sequence of time slots, and wherein adjusting

Art Unit: 2666

transmitter power on a time slot by time slot basis in relation to a determination of transmission system during each time slot as in claim 17 and further comprising defining the transmission system an organization channel and a plurality of mutually independent message channels, each one of the plurality message channels defining a corresponding sequence of time slots; defining transmission frames, each frame having a frame length and comprising sub-frame interval during which channel characteristics, including transmission system gain, are measured; transmitting information symbols via a selected one of the plurality message channels in relation to a transmission frame; varying time slots in the selected one message channel in accordance with measured channel characteristics; and, varying transmitter power on a time slot by time slot basis accordance with transmission system gain as in claim 18 (see col. 9 line 66 to col. 10 line 6 and col. 1 lines 31-39 which recite providing power control for the every slot and whereby one frame is divided into slots). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein information symbols are transmitted in a sequence of time slots, and wherein adjusting transmitter power on a time slot by time slot basis in relation to a determination of transmission system during each time slot

Art Unit: 2666

and further comprising defining the transmission system an organization channel and a plurality of mutually independent message channels, each one of the plurality message channels defining a corresponding sequence of time slots; defining transmission frames, each frame having a frame length and comprising sub-frame interval during which channel characteristics, including transmission system gain, are measured; transmitting information symbols via a selected one of the plurality message channels in relation to a transmission frame; varying time slots in the selected one message channel in accordance with measured channel characteristics; and, varying transmitter power on a time slot by time slot basis accordance with transmission system gain as taught by Sato in the communications system and method of Alouini et al. The information symbols being transmitted in a sequence of time slots, and wherein adjusting transmitter power on a time slot by time slot basis in relation to a determination of transmission system during each time slot and further defining the transmission system an organization channel and a plurality of mutually independent message channels, each one of the plurality message channels defining a corresponding sequence of time slots; defining transmission frames, each frame having a frame length and comprising sub-frame interval during which channel

Art Unit: 2666

characteristics, including transmission system gain, are measured; transmitting information symbols via a selected one of the plurality message channels in relation to a transmission frame; varying time slots in the selected one message channel in accordance with measured channel characteristics; and, varying transmitter power on a time slot by time slot basis accordance with transmission system gain can be implemented by connecting power controlling system and using the frame and time slots of Sato in the system and method of Alouini et al. The motivation for using power controlling system, the frame and time slots as taught by Sato in the communication system and method of Alouini et al. being that it provides more efficiency for the system since the system can better control the power at a high precision at the transmitting end.

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alouini et al. (6,304,593) in view of Sommer et al. (6,647,071).

For claim 31, Alouini et al. disclose the system and method described in paragraph 7 of this office action. For claim 31, Alouini et al. disclose all the subject matter of the claimed invention with the exception of wherein the receiver comprises a

Art Unit: 2666

Fractional Spaced Equalizer (FSE), including the step of pre-emphasizing information symbols at the transmitter following channel assessment at the receiver and communication of the assessed channel transmission characteristics to the transmitter.

Sommer et al. from the same or similar fields of endeavor teach that it is known to provide the receiver comprises a Fractional Spaced Equalizer (FSE), including the step of pre-emphasizing information symbols at the transmitter following channel assessment at the receiver and communication of the assessed channel transmission characteristics to the transmitter (see col. 5 lines 6-13 and the abstract which recite the receiver being based on an FSE fractionally spaced equalizer including the feedback equalizer loop for updating equalizer parameters). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the receiver comprises a Fractional Spaced Equalizer (FSE), including the step of pre-emphasizing information symbols at the transmitter following channel assessment at the receiver and communication of the assessed channel transmission characteristics to the transmitter as taught by Sommer et al. in the communications system and method of Alouini et al. The receiver comprising a Fractional Spaced

Equalizer (FSE), including the step of pre-emphasizing information symbols at the transmitter following channel assessment at the receiver and communication of the assessed channel transmission characteristics to the transmitter can be implemented by connecting the Fractional Spaced Equalizer (FSE) of Sommer et al. to the receiver of Alouini et al. The motivation for using the Fractional Spaced Equalizer (FSE) at the receiver as taught by Sommer et al. in the communication system and method of Alouini et al. being that it provides more efficiency for the system design since the system uses a known type of equalizer at the receiving end.

Allowable Subject Matter

11. Claims 19-22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gross et al. disclose a method and apparatus for varying power levels in a multicarrier modem.

Art Unit: 2666

Chang et al. disclose TDMA communication system having enhanced power control.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick C. Hom whose telephone number is 571-272-3173. The examiner can normally be reached on Monday to Friday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/067,793

Page 15

Art Unit: 2666

SH

A handwritten signature in black ink, appearing to read 'Dang Ton', with a stylized flourish at the end.

DANG TON
PRIMARY EXAMINER